To: McClintock, Katie[McClintock.Katie@epa.gov]
From: Eric Lovell
Sent: Tue 2/23/2016 4:43:31 PM
Subject: RE: Uroboros response to request for information

OK, great. 10:30 to 12 will work fine for a pick-up, thank you. We are just stamping all pages with the confidentiality mark now. If you could give me a closer time for your arrival it would be helpful.

Eric

From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]
Sent: Monday, February 22, 2016 8:53 PM
To: Eric Lovell
Subject: RE: Uroboros response to request for information

Batch tickets sound perfect and I don't need the recipes for now. Thank you for pulling those together. Also the inventory records would be super helpful if that is possible. I am actually in Portland and if it is easier I could pick up the records tomorrow morning if you would like. It would probably be sometime between 10:30-12ish? (I am driving to seattle after that) Mailing is fine too, whichever you prefer.

Katie

From: Eric Lovell [mailto:eric@uroboros.com]
Sent: Monday, February 22, 2016 9:01 AM
To: McClintock, Katie <McClintock.Katie@epa.gov>
Subject: RE: Uroboros response to request for information

OK, that's what I was thinking. We have the batch tickets for you now, though we still need to go back and mark each page 'Proprietary Formulation, CBI'. They will show you the actual weights measured out as you expected. Since we tend to produce 1.5 to 2 months of inventory of any finished product, the 4+ month time span you requested would cover about 2 production cycles for most finished items.

Your request for information also asked for recipes (formulas in our terminology), which show the same information as batch tickets (weights of each raw material) but in 1000 Lb standard weights, hence my query on this topic.

We could also provide inventory reports and purchase records for any raw material for any time period, so that would be another way to get to the total amounts used per raw material. For example, starting inventory, plus purchases, less ending inventory would equal amount used. I think this would be easier than adding up the small amounts over hundreds of batch tickets.

I suggest we send up the copies we've made of the batch tickets so you can get a feel for how they will work for you, then consider what further information you might need.

Please confirm,

Eric L.

From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]
Sent: Saturday, February 20, 2016 8:19 PM
To: Eric Lovell
Subject: RE: Uroboros response to request for information

Hi Eric –

Thank you for your email. We need to get information related to the quantity of each metal used at the facility each day over a period of time. A year would be best, but I am starting with a shorter period of time to lessen the burden. The formulas do not provide information on how much of the different products you make. I need to know how many of each formula you made and the date. If you have access to the batch tickets, then those are the records I need that will help me most accurately and quickly determine the amount of metals used.

Just to make sure I understand why you are asking the question, do you have access to those batch tickets? Are they kept somewhere (or saved in a computer)? If so, this should be easy to produce, even if it is 400 pages. If they are not kept, then we should talk about what records you do have (batch recipes and perhaps another charge/operation log which would show how much of each recipe was made on a particular day). However, if those batch tickets (with actual quantities used per day) exist, then those are the records we are requesting.

Does this help?

Katie

From: Eric Lovell [mailto:eric@uroboros.com]
Sent: Saturday, February 20, 2016 10:48 AM
To: McClintock, Katie <McClintock.Katie@epa.gov>
Subject: RE: Uroboros response to request for information

Would you mind if we re-visit the topic of the batch tickets and recipes? Here's why:

There were in excess of 400 unique batch tickets from the 4+ month period you are examining. Each shows the exact weight of each raw material used, in addition to the melted weight of that mix. The formulas show the same information but in standardized 1000 Lb. quantities. I'm not sure what you'll gain for our effort of collecting and your effort reviewing another 400+ pages with essentially the same information.

Please advise.

Eric L.

From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]

Sent: Friday, February 19, 2016 7:19 PM
To: Eric Lovell
Subject: RE: Uroboros response to request for information

Thank you Eric –

You have been diligent and responsive and I appreciate your frequent check ins about the progress. I will start reviewing this data this weekend and let you know what questions I have.

Katie

From: Eric Lovell [mailto:eric@uroboros.com]
Sent: Friday, February 19, 2016 2:55 PM
To: McClintock, Katie <McClintock.Katie@epa.gov>
Subject: Uroboros response to request for information

Dear Ms. McClintock,

Attached are eight digital files containing much of what you have requested. The first is a written response to each of the questions, and the others contain supporting documents.

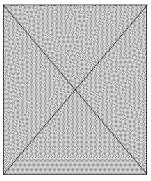
I believe this fulfills your request completely, except for the batch tickets and formulas/recipes. We are still working on collecting those documents, and expect to mail those to you in paper form early next week. I apologize if it appears we are being too slow at providing these documents. I can explain what is taking the time if you wish, but we are putting several hours per day into it, and are getting close to having a complete and accurate set for you.

If I have missed anything, if you need additional information, or if you need any explanations of the materials, please let me know.

Sincerely,

Eric L.

Eric Lovell
President



2139 N. Kerby Ave
Portland, OR 97227
503-284-4900 x 201 T
503-284-7584 F

To: McClintock, Katie[McClintock.Katie@epa.gov]
From: Eric Lovell
Sent: Mon 2/22/2016 5:01:24 PM
Subject: RE: Uroboros response to request for information

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Sent: Saturday, February 20, 2016 8:19 PM
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Katie

From: Eric Lovell [mailto:eric@uroboros.com]
Sent: Saturday, February 20, 2016 10:48 AM
To: McClintock, Katie <McClintock.Katie@epa.gov>
Subject: RE: Uroboros response to request for information

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with essentially the same information.

Please advise.

Eric L.

From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]
Sent: Friday, February 19, 2016 7:19 PM
To: Eric Lovell
Subject: RE: Uroboros response to request for information

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Katie

From: Eric Lovell [mailto:eric@uroboros.com]
Sent: Friday, February 19, 2016 2:55 PM
To: McClintock, Katie <McClintock.Katie@epa.gov>
Subject: Uroboros response to request for information

Dear Ms. McClintock,

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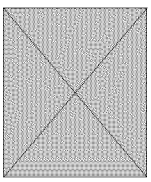
Sincerely,

Eric L.

Eric Lovell
President



2139 N. Kerby Ave
Portland, OR 97227
503-284-4900 x 201 T
503-284-7584 F

To: McClintock, Katie[McClintock.Katie@epa.gov]
From: Wroble, Julie
Sent: Mon 2/22/2016 4:52:23 PM
Subject: FW: NATA data for chromium
Portland_Air_Toxics_Final_Report_June2007.pdf

Can you post this information on your daily?

I think it puts the results into perspective.

Julie

From: Strum, Madeleine
Sent: Monday, February 22, 2016 8:06 AM
To: Palma, Ted <Palma.Ted@epa.gov>; Wroble, Julie <Wroble.Julie@epa.gov>
Subject: RE: NATA data for chromium

Julie and Ted

The Portland NATTS has both hex chromium and chromium measurements– both PM10

The Portland NATTS is at

MONITOR_LATITUDE	MONITOR_LONGITU
45.561301	-122.678784

The annual average chromium concentration ranges from 0.8 to 1.3 ng/m3; most of the 1-in-6 measurements (across all years) are below MDL. Year 2013 is 0.9; year 2005 is 1.1

Chromium VI at the Portland NATTS is mostly nondetect (except for 2005 – but they were still mostly below MDL). For nondetect we substituted zero. Annual averages ranged from 0.01 ng/m3 (2011) to 0.03 ng/m3 (2005).

If you look at the Portland community scale air toxics grant results, chromium was also mostly below MDL. (see attached)

Madeleine Strum
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards/Air Quality Assessment Division/EIAG
919 541 2383 (voice)

From: Palma, Ted
Sent: Monday, February 22, 2016 7:17 AM
To: Wroble, Julie <Wroble.Julie@epa.gov>
Cc: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: NATA data for chromium

these numbers seem high, according to the 2011 NATA

around the bullseye plant Chromium VI (Hexavalent) is (µg/m3) 0.000036

or 0.036 ng/m3. if we assume that the hex is only 1% of total we would get a total Cr of about 4 ng/m3.

Maybe Madie can look at NATTS sites to see what they have

Ted

Ted Palma

USEPA

OAQPS/HEID/ATAG

MD C539-02

RTP, NC 27711

919-541-5470 (work)

palma.ted@epa.gov

From: Wroble, Julie
Sent: Friday, February 19, 2016 1:48 PM
To: Palma, Ted <Palma.Ted@epa.gov>
Cc: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: RE: NATA data for chromium

Table 3-2 (http://www.pscleanair.org/library/Documents/PSAirToxicsEvalFinal.pdf) shows much lower levels of chromium than what was seen near Bullseye. This is reassuring that what's at Bullseye is unique.

From: Wroble, Julie

Sent: Friday, February 19, 2016 10:42 AM
To: Palma, Ted <Palma.Ted@epa.gov>
Cc: Strum, Madeleine <Strum.Madeleine@epa.gov>
Subject: NATA data for chromium

Ted/Madeleine:

I'm doing a bit of my own searching on chromium to try to get a handle on some background information for the Bullseye Glass situation. I am just reading ATSDR's tox profile and they say urban air typically contains 0-30 ng/m3 of chromium. If that is true, then maybe the results in Portland aren't that alarming. However, I wonder how ATSDR's statement compares with either NATA or air toxics monitoring studies for chromium.

Have you looked into the national or Portland NATA results for chromium? I'll see what some of the regional monitoring studies have to say.

Julie

sample date	**Chromium (ng/m3)**
10/6/15	406.7
10/7/15	20.2
10/9/15	24.4
10/10/15	24.9
10/12/15	25.5
10/14/15	19.0
10/15/15	17.4
10/17/15	21.0
10/18/15	20.1
10/20/15	21.4
10/21/15	22.8
10/23/15	23.3
10/24/15	439.5
10/26/15	48.0
10/27/15	24.4
10/29/15	37.7
10/30/15	38.5
11/2/15	52.6
Average	**71.5**

Julie Wroble|Acting Unit Manager, Risk Evaluation Unit|Toxicologist|USEPA Region 10|1200 6th Ave., OEA-140|Seattle, WA 98101|T: 206-553-1079|e-mail: wroble.julie@epa.gov

Portland Air Toxics
Community Assessment Monitoring Project
Portland, Oregon
2005

Air Quality Division
State of Oregon, Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204

Laboratory Division
State of Oregon, Department of Environmental Quality
17121 SW Eleventh Avenue
Portland, OR 97201

June 2007

INTRODUCTION

The 1996 National-scale Air Toxics Assessment[1] (NATA) done by the U.S. Environmental Protection Agency (EPA) estimated that concentrations of sixteen toxic chemicals in Oregon were high enough to warrant public health concern. In light of this, and other evidence, the Oregon Department of Environmental Quality (ODEQ) has worked to establish a systematic risk based process for identifying and reducing public health problems caused by air toxics in communities throughout the state. The Oregon Environmental Quality Commission adopted rules in October 2003 that created the Oregon Air Toxics Program.

This Program approaches the problem of air toxics in three ways. The primary approach (Geographic) relies on community members, working with ODEQ, to identify toxic air contaminants of concern in an urban area, determine their sources, and develop strategies that will reduce peoples' exposure to those chemicals. (The other two approaches use source category specific and facility specific tools to address statewide and "hot spot" issues respectively.) Because the geographic approach is at the heart of the Oregon program ODEQ has been working hard to develop the scientific tools needed to help communities accomplish the challenging tasks of solving their air toxics problems.

A monitoring study was done in 1999-2000 when five sites were established in the Portland area and concentrations were measured for a full year. That study demonstrated fairly similar concentrations of most gaseous air toxics, many related to mobile sources, throughout the city. Higher concentrations of some pollutants, especially a few metals, were found in localized areas. Following data analysis, a site in North/Northeast Portland was established as representative of the urban area to measure trends in ambient concentrations and the effectiveness of emissions reduction strategies.

Oregon DEQ also attempted to clarify spatial concentration gradients in the Portland airshed using modeling. The Portland Air Toxics Assessment[2] (PATA) set out to improve upon the NATA by utilizing a dispersion model (CALPUFF) that could account for local variations in topography and meteorology. This local scale model, coupled with better resolution of source locations and a refined mobile source emissions inventory, gave PATA the capability to predict problem areas within the urban area. These model estimates were plotted as isopleth maps for each pollutant that ODEQ used to give community members a much better picture of concentration levels and gradients across the city.

The EPA request for grant applications to conduct a community ambient air toxics monitoring study provided ODEQ with an opportunity to significantly advance the State air toxics program. EPA and ODEQ both recognize that ambient air measurement data is essential to convince stakeholders that some air toxics concentrations warrant concern, while other air toxics may not. Only measurements are generally accepted as an indication of whether some neighborhoods in a community are disproportionately at risk. But monitoring can also be used to validate models capable of predicting ambient concentrations and source contributions. By giving models greater credibility, through monitoring validation, they can become important tools for planning and informed decision making.

This project's primary objectives, then, were to:

- measure air toxics concentrations and to characterize concentration variations across the urban airshed and in predicted problem areas; and
- assess the ability of local-scale models to predict ambient concentrations so that they could be used to predict the effect of particular emissions reduction strategies future ambient concentrations.

EXPERIMENTAL WORK

As required by the grant, Oregon DEQ committed to providing resources and cooperating with EPA in establishing and operating an air toxics monitoring network in the Portland airshed. Table 1 shows which agency provided the resources for the six sites and the measurements made in this study.

Table 1: Monitoring support by Agency

	Roselawn	***Post Ofc***	***Lafayette***	***Kelly***	***Highland***	***Kauffman***
TO-15	ODEQ	ODEQ	ODEQ	EPA	EPA	EPA
TO-11A	ODEQ	ODEQ	ODEQ	EPA	EPA	EPA
TO-13A	ODEQ	ODEQ	ODEQ	EPA	EPA	EPA
PM_{10}-IO-3	ODEQ	ODEQ	ODEQ	EPA	EPA	EPA
$PM_{2.5}$-Speciate	EPA					
Aethelometer	ODEQ	EPA	EPA			
Cr (VI)	ODEQ	ODEQ	EPA	EPA	EPA	EPA
PFGC / VOC	EPA					

Monitoring Sites

The Portland, Oregon / Vancouver, Washington metropolitan area has significant topographic features that separate the airshed into distinct sections. Located at the confluence of two rivers, much of it is within a broad valley/floodplain, with a range of hills on the west separating the central city from the western suburbs. The Columbia River on the north separates Portland from Vancouver, although it has traditionally been considered a single airshed for planning purposes. The Willamette River, which divides Portland into its east and west sides, influences air flow to some extent.

Sites were located in all the major quadrants of the city, in order to provide information about the effect of topography as well as source influence. Each site, described below, met EPA's neighborhood-scale siting criteria, representing a mix of surrounding land uses, although in most cases neither point, area, or mobile sources predominated. An aerial photo of the Portland/Vancouver urban area with monitoring sites indicated is shown below.

Roselawn

This site, located in the North/Northeast quadrant of the city is representative of a typical inner city neighborhood. This area is within a half kilometer of a variety of commercial businesses, some light manufacturing, and city arterial streets. About a kilometer away is

the busiest transportation corridor (Interstate 5) in the city. Major industrial and Port facilities on both sides of the Willamette River are on the west, two to four kilometers away. There is another industrial/Port area about the same distance to the north along the Columbia River. Community members believe that this area of the city is disproportionately affected by its proximity to pollution sources, making monitoring here important for equity reasons. This site has served as the Department's primary air toxics monitoring site since 1999 and is now transitioning into a component of Portland's NCORE multi-pollutant strategy.

Post Office
This site in the Northwest quadrant of the city is on a residential street and is on the boundary between the highest density residential area in the city and Portland's primary industrial area. It is within a half kilometer of a small commercial area, a foundry, and numerous metal finishing operations. Railroad yards, Port operations, including fuel handling facilities, wood products and other manufacturing businesses, and a major traffic bridgehead are within a kilometer. The West Hills, less than a half kilometer from this site, create a barrier to air movement to the west and restrict dispersion of pollution.

Lafayette
The site in Southeast Portland has been our primary particulate neighborhood impact site for over twenty years. This was one of the first places in the country where woodstove impacts on ambient fine particulate concentrations were recognized. Residential wood heating is still considered a very significant area source in the Pacific Northwest. Large traffic arterials, with some commercial activity, can be found within a half kilometer. A high volume Interstate link (I-205) is one to two kilometers away. No significant industrial facilities are within four kilometers.

Kelly
This was a new site located near the central business district. Modeling estimates from an earlier study suggested this location as having the highest impact of anywhere in the city from traffic volume and congestion. No significant point sources are within four kilometers.

Highland
This site is in a suburban residential area west of the West Hills, making it spatially distinct from the central city and the east side. However, model estimates indicate that it may be in an area of high ambient concentrations, resulting primarily from area and mobile sources located in these western suburbs. Some industry can be found more than a kilometer away to the north and east. Measurements at this site and at Kelly, both guided by model predictions, would help to confirm the model's ability to handle the terrain features and wind regime of the Portland airshed.

Kauffman
As already mentioned, Vancouver is considered an integral part of this airshed. The monitoring site was located in a residential area within less than a half kilometer of the Columbia River. Residents of this neighborhood have expressed concerns about air toxics released as planes approach the Portland International Airport just across the river. A major railroad line runs between the neighborhood and the river, and barge traffic on

the river is significant. This neighborhood is more than two kilometers away from major industrial and port facilities, but the nature of wind movement in the Columbia Gorge can episodically bring pollutants in from some distance away.

Figure 1: Portland / Vancouver airshed with Monitoring Sites

Ambient Air Toxics Measurements

The highest priority for this community assessment project was to gather credible data for program implementation and decision making. It was important to use standard methods along with adequate control and assessment to assure quality.

EPA's Quality Assurance Policy requires that State, Local, or Tribal governments receiving financial assistance develop a Quality Management Plan (QMP). The Oregon Department of Environmental Quality has an agency-wide QMP and the DEQ Laboratory Division has a QMP for the ambient air monitoring program, including air toxics. Both have been reviewed and approved by EPA Region X.

Oregon DEQ established data quality objectives based on the NATTS program:

- For 1-in-6 day sampling frequency at least an 85% quarterly completeness;
- Measurement precision controlled to a coefficient of variation of no more than 15%;
- Measurement bias controlled to a coefficient of variation of no more than 15%;
- Minimum detection limits below the concentration associated with 1-in-a-million cancer risk.

A Quality Assurance Project Plan (QAPP) was developed for this study documenting Standard Operating Procedures (SOP) and the quality assurance (QA) and quality control

(QC) procedures. For those measurements that were used at the NATTS sites, the same sampling and analysis protocols were followed to enhance consistency between this project and the NATTS. Where non-standard technologies were use, ODEQ developed SOP, documented in the QAPP, to describe the methods and quality controls.

The primary focus of the project was to measure annual average air concentrations of a comprehensive list of air toxics using integrated 24-hour samples collected for either gas or particulate analysis, going well beyond the urban air toxics core pollutants in Table 2.

Table 2: NATTS core pollutants

TO-11A	TO-13A	TO-15	IO-3
Acetaldehyde	7-PAH	Benzene	Arsenic
Formaldehyde		1,3-butadiene	Beryllium
		Carbon tetrachloride	Cadmium
		Chloroform	Chromium
		1,2-dichloropropane	Lead
		Methylene chloride	Manganese
		Tetrachloroethene	Nickel
		Trichloroethene	
		Vinyl chloride	

The ODEQ Laboratory routinely does these analyses using EPA's TO and IO Compendium of Methods:

- Method TO-15 for volatile organic compounds;
- Method TO-11A for carbonyls (aldehydes and ketones);
- Method TO-13A for semi-volatile organics; and
- Method IO-3 with ICP/MS for particulate (PM_{10}) trace metals.

A local contract Laboratory, certified by the National Environmental Laboratory Accreditation Program for hexavalent chromium, was responsible for this newer analysis. In addition, ODEQ deployed and operated three two-channel aethelometers to measure Black Carbon with the objective of determining diesel and woodstove contributions to the fine particle concentrations.

EPA's grant application process encouraged demonstration of new and innovative measurement technology. As a part of this project Oregon DEQ field tested a Pneumatic Focusing Gas Chromatograph[3,4,5] (PFGC) developed by Dr. Robert O'Brien of Portland State University. This instrument obtains continuous speciated VOC analysis by compressing an air sample to high pressure and injecting it into a field-located, portable gas chromatograph, also maintained at high pressure. Pressurization concentrates the sample and removes water vapor, thereby increasing sensitivity and allowing automation. Ambient air is continuously drawn through a sample loop and periodically compressed and injected into the PFGC. Samples are taken and analyzed every 30-60 minutes and 20-30 individual VOCs are resolved. This instrument focuses samples as large as a half liter, achieving 50 ppt sensitivity for benzene. The dual column PFGC allows measurement of both nonpolar and polar compounds. Since the instrument also captures

the methane peak, and since methane is quite constant in concentration at ~ 1.8 ppm in all areas away from large methane sources (e.g. landfills), the methane peak can serve as an internal standard for the integral flame ionization detector.

Finally, Oregon DEQ maintains a network of meteorology sites in the Portland area that complement National Weather Service and a network of criteria pollutant sites that can be used in conjunction with the air toxics data for emissions reduction planning.

RESULTS

Sampling for the project began in January 2005 and continued for the calendar year. Several different sampling schedules were followed: carbonyls, volatile organics, PM_{10} metals, and Cr (VI) were done on a one in six day schedule, to coincide with the national particulate network; and semi-volatile organics (PAH) on a one in 12 day schedule. Aethelometer measurement also began in January. Logistical problems delayed the start-up of the hourly VOC measurements with the PFGC but by March it was operating, and continued until the following April.

Physical and chemical analysis of the 24 hour integrated samples was done at the DEQ laboratory, and the contract laboratory as specified in the QAPP. Results were entered into EPA's Air Quality Data System (AQS) regularly. Aethelometer measurement data was reduced to hourly and 24 hour averages and also entered into AQS. While this report only presents a brief summary of the ambient concentration values, all of the underlying data values are available for the Department, other researchers, and the public to analyze at a later time.

Hourly VOC monitoring data from the PFGC was telemetered to Dr. O'Brien's laboratory at PSU where it was reduced and the results sent to DEQ electronically. This is the only data not yet available on the EPA data system.

Table 3 compares the annual averages of core urban pollutants for all six sites. Many of the core VOC were never, or seldom, measured above the minimum reporting limit (MRL). This includes 1,3-butadiene, carbon tetrachloride, chloroform, 1,2-dichloropropane, tetrachloroethene, trichloroethene, and vinyl chloride. Where the annual average was less than the MRL it is reported as <MRL.

Benzene annual averages were not calculated because less than 75% of the samples in at least three calendar quarters were determined to be valid due to a pump contamination issue that was uncovered late in the project. Having the PFGC hourly data available at the Roselawn site offers some hope that an annual average at this location can yet be calculated. If there is agreement between the two methods on days when both methods were used then daily averages can be calculated using the PFGC data and an annual average determined.

It must be noted that PAH annual average values are questionable because quality controls (holding times and surrogate recoveries) were not always within acceptable

limits, resulting in down-graded reported results. All valid samples were used in calculating the annual averages.

Table 3: **Annual Averages**

	Units	Highland	Lafayette	Post Office	Roselawn	Kelly	Kauffman
Acetaldehyde	ug/m3	1.25	1.64	1.66	1.53	1.48	1.43
Formaldehyde	ug/m3	1.58	2.14	2.4	2.17	2.16	1.97
1,3-butadiene	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Carbon tetrachloride	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloroform	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1,2-dichloropropane	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Methylene Chloride	ppbv	0.08	0.33	0.16	0.13	0.11	0.13
Tetrachloroethene	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Trichloroethene	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Vinyl chloride	ppbv	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
o-Xylene	ppbv	0.11	0.33	0.25	0.19	0.12	0.14
m,p-Xylene	ppbv	0.28	0.51	0.69	0.55	0.33	0.39
Toluene	ppbv	0.69	1.12	1.93	1.13	0.89	0.91
PAH	ug/m3	0.00071	0.00085	0.00064	0.00062	0.00057	0.00085
Naphthalene	ug/m3	0.0015	0.0014	0.0016	0.0012	0.0014	0.0019
As	ng/m3	1.06	1.32	0.93	1.74	1.22	1.03
Be	ng/m3	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cd	ng/m3	0.38	0.50	0.63	2.57	0.92	0.49
Cr	ng/m3	<3.2	<3.2	<3.2	<3.2	<3.2	<3.2
Cr (VI)	ng/m3	<0.042	<0.042	0.045	<0.042	<0.042	<0.042
Pb	ng/m3	3.18	5.72	6.60	11.7	5.79	3.82
Mn	ng/m3	3.8	6.4	41.9	15.9	19.2	8.0
Ni	ng/m3	<1.0	1.75	4.24	1.76	1.78	1.09

No similar site comparison information, or summaries, are available for the aethelometer data or the hourly VOC data yet.

The sampling problems encountered with the VOC canisters were identified because of the Laboratory's comprehensive quality controls. Unfortunately, they were discovered too late to allow annual averages to be determined during the project's timeframe. A new canister sampling process is now being investigated that will avoid the earlier contamination issue. Closer scrutiny of analysis results within a shorter period of time is a recommended improvement for future Quality Assurance Project Plans. A similar change in QC procedures and implementation should also correct the problem that resulted in down-grading of the PAH sample results.

DISCUSSION

This project successfully amassed a considerable amount of valuable air toxics ambient concentration information for the Portland / Vancouver airshed. Table 3 begins to show in simple terms how concentrations of some key pollutants vary across the urban area.

Over 85% of the scheduled samples were collected and analyzed, and duplicate/replicate sample analyses indicated a better than 15% precision in results. However DEQ did not meet all of the data quality objectives established for this project. Detection limits did not reach concentrations corresponding to the one in a million risk threshold for all the parameters measured. The Laboratory Division expects to improve detection and quantitation limits after the move to the new laboratory building and installation of updated equipment.

Accuracy was not always better than 15%, as measured by EPA coordinated inter-laboratory Performance Evaluation studies (PE). Between December 2004 and July 2006, when sample analyses were completed, the DEQ Lab participated in six PE for carbonyls, four PE for VOC, and three PE for metals. Analyses of formaldehyde and acetaldehyde were generally within 5% of the known values. Metals, except for beryllium, were usually within a few percent as well; although in May of 2006 reported values were high, as much as 15%. Accuracy of the volatile organics showed considerable variation over the course of the project, and with accuracy of measurement compound-specific. In late 2004 most of the reported values were much better than the 15% objective; some high and some low, indicating no particular bias in results. But studies in April and July of 2005 generally showed results to be low on the order of 20% or more across all pollutants. In December most parameters were improved and were again less than 10% different from the known value, however they remained consistently low.

While the data quality assurance results were not what we expected, good precision with fair accuracy means that sites can still be compared based on the ambient concentrations measured. What will be less reliable will be to compare the measured annual average concentrations, and assumed population exposures, to the ambient benchmark concentrations in order to draw conclusions about potential public health impact.

Normally benzene and 1,3-butadiene concentrations would be used to reflect motor vehicle source impacts. However without the benzene annual average data, and with the 1,3-butadiene annual averages all below the MRL, the concentrations of xylenes and toluene can be used as a indicator of this source impact. These annual average concentrations follow the pattern that would be expected from traffic volumes in the vicinity of the sites. Highland is lowest reflecting its location in a suburban residential area. The low concentrations at Kelly are somewhat surprising as modeling results had predicted the highest impact of traffic at this site.

The near-by industrial area is probably responsible for the higher xylene, toluene, and methylene chloride concentrations at the Post Office, but this too requires further analysis.

The acetaldehyde and formaldehyde concentrations show small variations, with the Highland site again having lower annual averages. This data begins to paint a picture of the western suburbs, separated as they are from the urban area by a range of hills, as a distinctly different airshed.

The metals data, at least after this initial analysis, is the most interesting. Considerably higher concentrations of manganese and nickel at the Post Office site clearly show the impact of the nearby foundry and other metal working facilities in the vicinity. On the other hand the source(s) of the higher arsenic, cadmium, and lead that appear at the Roselawn site are not clear. Although hexavalent chromium concentrations were generally found below the reporting limit, its presence at all in NW Portland is somewhat of a mystery. There are no chromium electroplaters in this part of the city. However there is some speculation that other metal working processes may release this pollutant.

Results from this project are already helping to clarify spatial concentration patterns of air toxics in the urban area. As a first step measured values, along with model estimates, will be used by ODEQ to characterize risk, based on concentration maps, to determine the boundaries for the Portland geographic planning area. These results will also set the stage for the community planning process, by helping people understand the spatial extent of the general air toxics problem, and by pinpointing localized areas of impact that may require special consideration.

A key objective of this study was to use this 2005 ambient air toxics concentration data as a validation tool for at least three different modeling methodologies. EPA will predict ambient concentrations in Portland using the ASPEN model for the 2005 NATA. ODEQ, using the experience gained in PATA with CALPUFF, will also model 2005 emissions. However, a model that includes chemical transformations would be even better, especially for pollutants such as acrolein and formaldehyde where secondary formation is critical. The Northwest International Air Quality Environmental Science and Technology Consortium (NW-AIRQUEST) has developed predictive capability for ozone, nitrogen oxides, and air toxics concentrations that extend through the Portland area (called AIRPACT2). Plans are underway to upgrade the dispersion model to CMAQ, which has the capability to estimate chemical transformations. Since these predictions are archived, Oregon DEQ will be able to compare the measured values from 2005 to the estimates provided by this advanced model.

The monitored annual averages can also be compared to Oregon's established Ambient Benchmark Concentrations (ABC) to begin to give an idea of the air toxics of most concern to human health. Arsenic, Cadmium, and Acetaldehyde are above the ABC at all sites. And although the benzene and PAH annual averages are questionable it appears likely that these are as well. At this point these measurements only represent concentrations at these locations and times and cannot be used to make definitive judgments about public health risk from air toxics throughout the airshed. By coupling these measurements with dispersion and exposure modeling a comprehensive picture will emerge.

SUMMARY

Thanks to EPA's support, Oregon DEQ now has considerable air toxics measurement data that can provide Portland area citizens with critical information about local air toxics problems in order to begin the process of reducing the health impact of those chemicals. Measured concentrations across the airshed support DEQ assertions that mobile sources are a primary source of air toxics in the Portland airshed, and further, that those concentrations are fairly homogeneous. The data also shows local impacts from unique local sources that will have to be addressed in any airshed-wide emissions reduction planning process. Before DEQ begins the public planning process considerably more data analysis will be needed to clarify sources contributions.

Dispersion modeling of 2005 emissions, with exposure modeling, risk characterization, and source contribution estimates will be integral parts of the technical analysis provided to the local advisory committee in Portland. Comparisons of the 2005 measured values to modeling estimates will determine whether models achieve credibility with the public and can be relied upon for strategy development, or must be further improved.

Ultimately the concentrations measured in this study will be used as a baseline to track measured concentrations as emissions reduction efforts are implemented. Future monitoring will be relied upon to determine if goals have been met. Oregon DEQ anticipates that a successful planning and emissions reduction effort in Portland will help to advance similar efforts in other Oregon communities which will lead to better public health in communities across the State.

REFERENCES

1. 1996 National-scale Air Toxics Assessment, U.S. Environmental Protection Agency, May 2002

2. Portland Air Toxics Assessment, Oregon Department of Environmental Quality, August 2006

3. Ambient Monitoring for PCE with Automated Real-Time Gas Chromatography, Control # 04-A-448-2005 AWMA Conference, Pittsburgh PA, Bruce Dumdei, Ph.D. and Greg Smith, P.G., URS Corporation, 122 South Michigan Avenue, Chicago Illinois 60603, Robert O'Brien, Ph.D., VOC Technologies, PO Box 8518, Portland OR 97207-8518

4. Air Emissions Impact Measurements at a Perchloroethene Remediation Site, Bruce Dumdei, Ph.D and Jennifer Krazak (URS Corporation, Chicago, Illinois USA), Robert O'Brien, Ph.D. (VOC Technologies, Portland, Oregon USA); Fifth International Battelle Conference on Remediation of Chlorinated and Recalcitrant. Compounds. May 22-25, 2006. Monterey, CA

5. B. Dumdei, J. DiCola, J. Krzak, URS Corporation; R. O'Brien, VOC Technologies. Paper AT-1a II. Issues in Air Toxics- Part 2, 2006 AWMA Conference, New Orleans LA

To: McClintock, Katie[McClintock.Katie@epa.gov]
From: Steve Van Slyke
Sent: Mon 2/22/2016 4:06:37 PM
Subject: RE: ardagh

The tool you refer to is standard permitting review steps which include an emission estimate expressed as a rate (can start with the material input to the process, coupled with other engineering assumptions including the presence of emission controls), identify appropriate release conditions (e.g. stack parameters), and then use a screening dispersion model to predict maximum impacts. I see no reason why anyone can use this approach.

From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]
Sent: Friday, February 19, 2016 8:27 PM
To: Steve Van Slyke
Subject: RE: ardagh

Steve –

One follow up question for you. Is your screening tool available outside of WA. Could Oregon use the tool to try to guestimate impact at Bullseye like we plan to do at Spectrum based on usages?

From: Steve Van Slyke [mailto:SteveV@pscleanair.org]
Sent: Thursday, February 18, 2016 6:18 PM
To: McClintock, Katie <McClintock.Katie@epa.gov>
Subject: RE: ardagh

Ardagh is subject to 63 Subpart SSSSSS. I'm attaching some of our Offsite Report review records regarding notifications and test reports for 6S performance testing. I'm also attaching copies of the last NESHAP performance test. My apologies – an electronic copy of the first test is not in the system. However, the Offsite Report review for that test discusses the results.

I'll have to get back to you on the local monitoring data – I need to check with others. I'm attaching a link to the one document I found. I think the only metals data I found in it related to the Beacon Hill monitoring site.

http://www.pscleanair.org/library/Documents/2010_Tacoma-Seattle_Air_Toxics_Report.pdf

From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]
Sent: Thursday, February 18, 2016 2:51 PM
To: Steve Van Slyke
Subject: ardagh

Thanks for bringing up Ardagh. Did you guys determine applicability of Part 63 SSSSSS?

Also any local monitoring data around there would be helpful.

Thanks Steve.

Katie McClintock

Air Enforcement Officer

EPA Region 10

1200 Sixth Avenue, Suite 900, OCE-101

Seattle, WA 98101

Phone: 206-553-2143

Fax: 206-553-4743

Mcclintock.katie@epa.gov

To: McClintock, Katie[McClintock.Katie@epa.gov]
From: Eric Lovell
Sent: Sat 2/20/2016 6:47:50 PM
Subject: RE: Uroboros response to request for information

Would you mind if we re-visit the topic of the batch tickets and recipes? Here's why:

There were in excess of 400 unique batch tickets from the 4+ month period you are examining. Each shows the exact weight of each raw material used, in addition to the melted weight of that mix. The formulas show the same information but in standardized 1000 Lb. quantities. I'm not sure what you'll gain for our effort of collecting and your effort reviewing another 400+ pages with essentially the same information.

Please advise.

Eric L.

From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]
Sent: Friday, February 19, 2016 7:19 PM
To: Eric Lovell
Subject: RE: Uroboros response to request for information

Thank you Eric –

You have been diligent and responsive and I appreciate your frequent check ins about the progress. I will start reviewing this data this weekend and let you know what questions I have.

Katie

From: Eric Lovell [mailto:eric@uroboros.com]
Sent: Friday, February 19, 2016 2:55 PM

To: McClintock, Katie <McClintock.Katie@epa.gov>
Subject: Uroboros response to request for information

Dear Ms. McClintock,

Attached are eight digital files containing much of what you have requested. The first is a written response to each of the questions, and the others contain supporting documents.

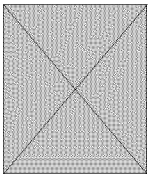
I believe this fulfills your request completely, except for the batch tickets and formulas/recipes. We are still working on collecting those documents, and expect to mail those to you in paper form early next week. I apologize if it appears we are being too slow at providing these documents. I can explain what is taking the time if you wish, but we are putting several hours per day into it, and are getting close to having a complete and accurate set for you.

If I have missed anything, if you need additional information, or if you need any explanations of the materials, please let me know.

Sincerely,

Eric L.

Eric Lovell
President



2139 N. Kerby Ave
Portland, OR 97227
503-284-4900 x 201 T
503-284-7584 F

To: McClintock, Katie[McClintock.Katie@epa.gov]
From: Steve Van Slyke
Sent: Fri 2/19/2016 2:18:15 AM
Subject: RE: ardagh
11656-526.pdf
11656-527.pdf
11656-559 .pdf
11656-559-2-09 Air Seattle 65 Notice of Compliance NESHAP 12-28-09 - Signed Letter Only.pdf
11656-568.pdf
11656-568-1-10 Glass NESHAPS 01-30-10.pdf
11656-640.pdf
11656-640-1-11 Agency Letter for Feb Stack Test.pdf
11656-640-3-St Gobain 4212 F3 Chrome F4 NOx SO2 Feb 2011_REV Op.pdf

Ardagh is subject to 63 Subpart SSSSSS. I'm attaching some of our Offsite Report review records regarding notifications and test reports for 6S performance testing. I'm also attaching copies of the last NESHAP performance test. My apologies – an electronic copy of the first test is not in the system. However, the Offsite Report review for that test discusses the results.

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From: McClintock, Katie [mailto:McClintock.Katie@epa.gov]
Sent: Thursday, February 18, 2016 2:51 PM
To: Steve Van Slyke
Subject: ardagh

Thanks for bringing up Ardagh. Did you guys determine applicability of Part 63 SSSSSS?

Also any local monitoring data around there would be helpful.

Thanks Steve.

Katie McClintock

Air Enforcement Officer

EPA Region 10

1200 Sixth Avenue, Suite 900, OCE-101

Seattle, WA 98101

Phone: 206-553-2143

Fax: 206-553-4743

Mcclintock.katie@epa.gov

SAINT-GOBAIN
CONTAINERS

December 17, 2009

Via E-mail and Certified Mail No. 7003 3110 0004 5475 8109
Ms. Madonna Narvaez
U.S. EPA Region 10
1200 Sixth Avenue
Mail Code: AWT-107
Seattle, WA 98101
narvaez.madonna@epa.gov

Re: 40 CFR Part 63, Subpart SSSSSS ("Glass NESHAP") Compliance
Saint-Gobain Containers, Inc. ("SGCI")
Seattle, Washington

Dear Ms. Narvaez:

With this letter, SGCI timely provides and/or confirms its Notification of Compliance Status with the Glass NESHAP for Seattle Furnaces #2, #3, and #4 pursuant to 40 CFR § 63.9(h) and § 63.11456(b). Specifically, this notification addresses each of the elements of 40 CFR § 63.9(h)(2)(i) as follows:

A. Stack testing for Furnace #2 on June 10, for Furnace #3 on June 9, and Furnace #4 on August 4, 2009, provides the method used to determine compliance.

B. The results of the stack testing for Furnaces #2, #3, and #4 are addressed in the stack test reports previously provided on August 6 and September 23, 2009.

C. Pursuant to 40 CFR § 63.11455(e), the affected furnaces will "demonstrate continuous compliance by satisfying the applicable recordkeeping requirements specified in § 63.11457."

D. As specified by 40 CFR § 63.11452(b), SGCI conducted Method 29 stack testing for chromium because it constitutes a "glass manufacturing metal HAP" added as a "raw material." The result of the respective stack tests were a 3-hour block average production-based metal HAP emission rate of 0.0041, 0.0018, and 0.004 lb/ton for Furnaces #2, #3, and #4, respectively. Each result is well below the applicable 0.02 lb/ton emission limit from the Glass NESHAP, Table 1, § 1(b).

E. Not applicable.

F. Not applicable.

G. Please see the certification of accuracy and compliance status below.

By copy of this letter, SGCI provides its Title V permitting agency (Puget Sound Clean Air Agency) with confirmation that the Glass NESHAP applies to the above-mentioned facility and will need to be added to SGCI's Title V permit for certain furnaces.

As noted in SGCI's August 6, 2009 letter to you, Seattle Furnace #5 is not an affected furnace under the Glass NESHAP. In addition, the August 6 letter formally withdrew a February 17, 2009 Amended Notification that was submitted with the belief that nickel would be used as a raw material at Furnace #4. As SGCI explained, however, nickel was not added as a raw material at Furnace #4. Thus, chromium remains the only Glass Manufacturing Metal HAP added as a raw material at Furnace #2, #3, and #4.

By signing this letter, I certify that I am the responsible official for the above-mentioned facility and, based on information and belief formed after reasonable inquiry, that (1) the information in this notification is accurate and (2) the above-mentioned facility has complied with the applicable requirements of the Glass NESHAP.

If you have any questions or require additional information, please contact Ms. Jayne Browning at 765-741-7112.

Sincerely,

Douglas Coburn
Plant Manager, Seattle Plant
Saint-Gobain Containers, Inc.

c: Gerry Pade, PSCAA
Jayne Browning
Marlon Trigg
Tristan Thommasson
Jim Moretti
Valerie Krulic
Kurt Kissling
Ty Sibbit

pscleanair.org
Puget Sound Clean Air Agency

Stack Test Evaluation

Puget Sound Clean Air Agency
Compliance Department

Reg #:	11656 - 526	Routed:	Engineer	GSP	Inspector	TJH	Supervisor	MAP	Planner	RGB
Date Received:	08/07/2009	Reviewed:		08/14/2009		09/01/2009		09/02/2009		09/03/2009

☑ Received Paper Copy

Facility: **Ardagh Glass**

Address: **5801 E Marginal Way S**
Seattle, WA 98134

Date Received: **08/07/2009**

Date Evaluated: **08/14/2009**

Test Date: **06/10/2009**

Test Results: ☑ **Passed** ☐ **Failed**

Date Observed:

Pollutant Tested: **7440-47-3 - Chromium and compounds**

Emission Unit Tested: **Glass Melting Furnace 2**

NOV / WW #: **2-009314**

Message on Information Request:

Review:

This is a stack test and Notification of Compliance Status report for furnaces 2 and 3. The stack test was performed to determine compliance with the MACT standard of 0.02 lb/ton of glass produced under Section 63.11451 of Subpart SSSSSS. Furnace 2 was tested on 6/10/09 and was found to be emitting 0.004 lb of chromium per ton of champagne green glass. Furnace 3 was tested on 6/9/09 and was found to be emitting 0.002 lb/ton of antique green glass. Chromium (iron chromite) is the only metal HAP added to the glass and it produces the green color. Champagne green contains about 6 times more iron chromite than antique green. It may be necessary to retest furnace 3 the next time it produces champagne green glass.

These tests had to be conducted while the furnaces were operating at their maximum production rate per 63.11452(b)(3). The pull rates during the test were 6.56 ton/hr for furnace 2 and 8.55 ton/hr for furnace 3. During the previous four tests, furnace 2 had pull rates of 7.14 ton/hr, 8.49 ton/hr, 8.74 ton/hr, 8.78 ton/hr (6/12/09, 2/25/09, 12/16/08, and 8/27/08). During the previous four tests, furnace 3 had pull rates of 8.55 ton/hr, 8.88 ton/hr, 8.94 ton/hr, 8.48 ton/hr. It doesn't appear that furnace 2 was operating at its maximum production rate during the chromium test. Further inquiry is warranted. The next quarterly test should be in September.

Although Method 29 enables simultaneous measurement of PM and metal emissions, the PM emissions weren't quantified. Therefore, I couldn't tell how representative these tests were in terms of particulate emissions.

The compliance date is 12/26/09 per 63.11450(a). The test had to be performed within 180 days of this compliance date per 63.11452(a). The test results were required to be submitted along with the Notification of Compliance Status within 60 days of the test per 63.11456(b)(1). Per 63.9(h), the reports had to be postmarked by 8/9/09 (furnace 3) and 8/10/09 (furnace 2). A hardcopy of these reports was received on 8/7/09. The MACT standard is not in the AOP yet so it's unclear if the reports have to be submitted electronically per Section 7.09(c) of Reg. I.

The Notification of Compliance Status must contain the information specified in 63.9(h). Since these furnaces have no control equipment, no monitoring is required under 63.11454 and continuous compliance can be demonstrated by satisfying the recordkeeping requirements under 63.11457, which appear to include only paragraphs (a)(1), (a)(4), (b), (c) and (d).

The standards don't apply during startup, shutdown and malfunction per 63.11455(a). However, the furnaces have to be operated in accordance with good air pollution control practices at all times per 63.11455(b) and 63.6(e)(1)(i).

I concur with Engineer Pade's findings that furnace No. 2 appears to have been tested while the furnace was operating at less than the maximum production rate. 40 CFR Part 63 Subpart 63.11452(b)(3) requires that SGCI test while the furnace is operating at the maximum production rate. I issued WW 2-009314 for failure to test the furnace at the maximum production rate and requested SGCI to submit in written report verifying that furnace # 2 was operating at the maximum production rate during the source test on 6/10/09 and to explain why higher production rates were recorded on source tests conducted on 6/12/09, 2/25/09, 12/16/08, and 8/27/08. In addition, please supply the daily production rate for furnace # 2 for the months of May, June and July of 2009.

pscleanair.org
Puget Sound Clean Air Agency

40 CFR Part 63 MACT NESHAP Subpart SSSSSS Evaluation

Puget Sound Clean Air Agency
Compliance Department

Reg #: **11656 - 559**	Routed:	Engineer **GSP**	Inspector **TJH**	Supervisor **MAP**	Planner **RGB**
Date Received: **12/28/2009**	Reviewed:	**01/05/2010**	**03/29/2010**	**03/30/2010**	**03/30/2010**

☐ Received Paper Copy

Facility: **Ardagh Glass**

Address: **5801 E Marginal Way S**
Seattle, WA 98134

Date Received: **12/28/2009**

Date Evaluated: **01/05/2010**

NOV / WW #:

Message on Information Request:

Review:

This is the Notification of Compliance Status for NESHAP Subpart 6S. The notification submits the data specified in Section 63.9(h)(2) as specified in Section 63.11456(b). However, both of these sections require the notification to be submitted within 60 days of the performance tests - same as the test reports. The performance tests were conducted on 6/9/09 (furnace 3), 6/10/09 (furnace 2), and 8/4/09 (furnace 4). Therefore, the respective notifications were due by 8/8/09, 8/9/09 and 10/3/09. I called Marlon Trigg and asked him about it and he said the letter was drafted by Jayne Browning in Muncie and he wasn't involved.

It was sent to EPA Region 10 and we received a copy. However, our delegation agreement with the EPA references the delegation approval mechanism published in the federal register (63 FR 66054-66062) which specifies that all notifications and reports required by the NESHAPS must be submitted to the Agency and that EPA doesn't even need copies. I called Madonna Narvaez and she said there may be an agreement under the ongoing settlement negotiations to submit this information to EPA. So I called Katie McClintock but she said there wasn't and that it would be appropriate for me to tell Saint-Gobain to direct such notifications and reports to PSCAA, which I did the following day.

I concur with GSP's actions in this matter.

pscleanair.org
Puget Sound Clean Air Agency

Stack Test Evaluation

Puget Sound Clean Air Agency
Compliance Department

Reg #:	11656 - 527	Routed:	Engineer	GSP	Inspector	TJH	Supervisor	MAP	Planner	RGB
Date Received:	08/07/2009	Reviewed:		08/14/2009		09/01/2009		09/02/2009		09/03/2009

☑ Received Paper Copy

Facility: **Ardagh Glass**

Address: **5801 E Marginal Way S**
Seattle, WA 98134

Date Received: **08/07/2009**

Date Evaluated: **08/14/2009**

Test Date: **06/10/2009**

Test Results: ☑ **Passed** ☐ **Failed**

Date Observed:

Pollutant Tested: **7440-47-3 - Chromium and compounds**

Emission Unit Tested: **Glass Melting Furnace 3**

NOV / WW #:

Message on Information Request:

Review:

This is a stack test and Notification of Compliance Status report for furnaces 2 and 3. The stack test was performed to determine compliance with the MACT standard of 0.02 lb/ton of glass produced under Section 63.11451 of Subpart SSSSSS. Furnace 2 was tested on 6/10/09 and was found to be emitting 0.004 lb of chromium per ton of champagne green glass. Furnace 3 was tested on 6/9/09 and was found to be emitting 0.002 lb/ton of antique green glass. Chromium (iron chromite) is the only metal HAP added to the glass and it produces the green color. Champagne green contains about 6 times more iron chromite than antique green. It may be necessary to retest furnace 3 the next time it produces champagne green glass.

These tests had to be conducted while the furnaces were operating at their maximum production rate per 63.11452(b)(3). The pull rates during the test were 6.56 ton/hr for furnace 2 and 8.55 ton/hr for furnace 3. During the previous four tests, furnace 2 had pull rates of 7.14 ton/hr, 8.49 ton/hr, 8.74 ton/hr, 8.78 ton/hr (6/12/09, 2/25/09, 12/16/08, and 8/27/08). During the previous four tests, furnace 3 had pull rates of 8.55 ton/hr, 8.88 ton/hr, 8.94 ton/hr, 8.48 ton/hr. It doesn't appear that furnace 2 was operating at its maximum production rate during the chromium test. Further inquiry is warranted. The next quarterly test should be in September.

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The compliance date is 12/26/09 per 63.11450(a). The test had to be performed within 180 days of this compliance date per 63.11452(a). The test results were required to be submitted along with the Notification of Compliance Status within 60 days of the test per 63.11456(b)(1). Per 63.9(h), the reports had to be postmarked by 8/9/09 (furnace 3) and 8/10/09 (furnace 2). A hardcopy of these reports was received on 8/7/09. The MACT standard is not in the AOP yet so it's unclear if the reports have to be submitted electronically per Section 7.09(c) of Reg. I.

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The standards don't apply during startup, shutdown and malfunction per 63.11455(a). However, the furnaces have to be operated in accordance with good air pollution control practices at all times per 63.11455(b) and 63.6(e)(1)(i).

I concur with Engineer Pade's findings on furnace No. 3. I issued WW 2-009314 for failure to test the furnace No. 2 at the maximum production rate on line No. 526.